



Walden University  
**ScholarWorks**

---

Walden Dissertations and Doctoral Studies

Walden Dissertations and Doctoral Studies  
Collection

---

2020

## Predictors of Lone Wolf Terrorism

Gwendolyn Shands  
*Walden University*

Follow this and additional works at: <https://scholarworks.waldenu.edu/dissertations>



Part of the [Public Policy Commons](#), and the [Quantitative, Qualitative, Comparative, and Historical Methodologies Commons](#)

---

This Dissertation is brought to you for free and open access by the Walden Dissertations and Doctoral Studies Collection at ScholarWorks. It has been accepted for inclusion in Walden Dissertations and Doctoral Studies by an authorized administrator of ScholarWorks. For more information, please contact [ScholarWorks@waldenu.edu](mailto:ScholarWorks@waldenu.edu).

# Walden University

College of Social and Behavioral Sciences

This is to certify that the doctoral dissertation by

Gwendolyn M. Shands

has been found to be complete and satisfactory in all respects,  
and that any and all revisions required by  
the review committee have been made.

## Review Committee

Dr. Jessie Lee, Committee Chairperson,  
Public Policy and Administration Faculty

Dr. Darius Cooper, Committee Member,  
Public Policy and Administration Faculty

Dr. Kathleen Schulin, University Reviewer,  
Public Policy and Administration Faculty

Chief Academic Officer and Provost  
Sue Subocz, Ph.D.

Walden University  
2020

Abstract

Predictors of Domestic Lone Wolf Terrorism

by

Dr. Gwendolyn M. Shands

MS, University of Michigan, 1991

BS, Wayne State University, 1989

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Policy and Administration

Walden University

May 2020

## Abstract

Lone wolf terrorism is political violence perpetrated by individuals who act alone, who do not belong to an organized terrorist group or network, and whose tactics and methods are conceived and directed by the individual without any direct outside commitments or directions. The increase of domestic lone wolf terrorism continues to impact the safety and security of the United States, yet little is known about the potential predictors of this type of behavior. Using McCauley and Moskalenko's framework of lone wolf terrorism as the foundation, the purpose of this nonparametric study was to examine the statistical association between certain elements of lone wolf terrorism including age, ethnicity, residency status, previous criminal activity, and whether family members exhibit radical ideologies, on predicting the probability of this behavior. Secondary data were acquired from the Department of Homeland Security's Profiles of Individual Radicalization in the US ( $n = 250$ ). These data were analyzed with descriptive statistics and chi-square as a test of association. Findings suggest that demographic variables (ethnicity, radical family, age, previous criminal activity, and residency status) are statistically associated with prevalence of lone wolf terrorism in the United States ( $p = .005$ ). Results of this study provide some insight as to the ways individuals become involved in, and their ability to disengage, from domestic lone wolf terrorism. The social change implications of the study include providing empirical evidence to law enforcement and counterterrorism agencies in the United States about proactive identification of lone wolf terrorists. As this information may help prevent certain types of violent acts and improve the safety and security of the United States.

Predictors of Domestic Lone Wolf Terrorism

by

Dr. Gwendolyn M. Shands

MS, University of Michigan, 1991

BS, Wayne State University, 1989

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Policy and Administration

Walden University

May 2020

## Dedication

This work is dedicated to my husband, Billy Cabbil, and my family for all of their support and encouragement. To my chair, Dr. Jessie Lee, who always had a positive word for me during times when I was most weary. Thank you. Words cannot begin to express my I appreciation for all your support.

## Acknowledgments

I would like to thank my chair, Dr. Jessie Lee. Your knowledge, mentorship, and support through this seemingly endless process, were the keys to my successful completion.

I must thank my committee member Darius Cooper for his time, guidance and encouragement throughout this process.

I cannot forget to thank my family, who, in the most supportive manner possible frequently asked “How’s it going? Are you almost finished yet?”

To Dr. George Bradley, I express a most heartfelt thank you. Thank you for lending a supportive ear, having far more logical brains, and always taking the time to answer the most ridiculous of SPSS related questions. Thank you for everything. Your guidance has led to the completion of this journey.

And to my husband, Billy, I don’t have the right words to thank you for always being there for me. Thank you for the reassuring hugs, comforting conversations, and for keeping me grounded, even when my stress levels were through the roof. You have taken my meltdowns, tears, and frustration in stride, and never allowed me to take myself, or my work, too seriously. It has been quite the journey, and I couldn’t imagine anyone else I would have wanted to have along for the ride.

## Table of Contents

List of Tables .....	iv
Chapter 1: Introduction to the Study.....	1
Background .....	2
Problem Statement .....	5
Purpose.....	6
Research Questions.....	7
Theoretical Framework .....	8
Nature of Study .....	9
Population and Scope of Study .....	10
Data Collection and Instrumentation .....	10
Definitions of Terms .....	11
Assumptions.....	12
Limitations .....	12
Delimitations .....	13
Significance of Study .....	14
Summary .....	14
Chapter 2: Literature Review .....	16
Introduction.....	16
Theoretical Concept .....	17
Literature Review Related to Key Variables .....	19
Lone Wolf Terrorist and Mental Health Issues.....	19



Characteristics of Lone Wolf Violence Studies Analyzed .....	20
Radicalization of Lone Wolf Terrorist.....	22
Cognitive Dissonance Theory.....	17
Conclusion/Summary.....	24
Chapter 3: Research Method.....	27
Introduction.....	27
Design .....	27
Research Questions and Hypotheses .....	28
Population and Data.....	29
Variables and Operational Definitions.....	30
Analytic Procedures .....	31
Assumptions and Limitations .....	32
Issues of Trustworthiness.....	33
Ethical Considerations/Conflict of Interest.....	34
Summary .....	35
Chapter 4: Results .....	36
Introduction.....	36
Methodology .....	37
Baseline Descriptive .....	37
Results.....	41
Summary .....	49
Chapter 5: Discussion, Conclusions, and Recommendations .....	50

Introduction.....	50
Interpretation of the Findings.....	50
Limitations of the Study.....	52
Implication for Social Change .....	52
Methodological and Theoretical Implications .....	53
Recommendations .....	54
Conclusion .....	54
References.....	55

## List of Tables

Table 1. Broad Ethnicity .....	38
Table 2. Age.....	39
Table 3. Residency Status .....	39
Table 4. Previous Criminal Activity .....	40
Table 5. Radical Family .....	41
Table 6. Case Processing Summary Radical Family and Broad Ethnicity .....	42
Table 7. Radical Family Broad Ethnicity Crosstabulation (a).....	43
Table 8. Radical Family Broad Ethnicity Crosstabulation (b).....	44
Table 9. Chi Square Test Radical Family Broad Ethnicity.....	44
Table 10. Symmetric Measures Radical Family .....	44
Table 11. Case Processing Summary Previous Criminal Activity .....	45
Table 12. Previous Criminal Activity and Residency Status Crosstabulations .....	45
Table 13. Previous Criminal Activity and Residency Status Crosstabulations .....	46
Table 14. Chi Square Test Previous Criminal Activity and Residency Status .....	46
Table 15. Symmetric Measure Previous Criminal Activity and Residency Status.....	47
Table 16. Case Processing Summary Age and Criminal Activity .....	47
Table 17. Age and Previous Criminal Activity Crosstabulation.....	48
Table 18 Chi Square Test Previous Criminal Activity and Age.....	49
Table 19 Symmetric Measures for Previous Criminal Activity and Age .....	49

## Chapter 1: Introduction to the Study

Recently there has been a surge in high profile domestic lone wolf attacks occurring in the United States such as the October 1, 2017 Las Vegas massacre or recent attacks in New York City. A lone wolf terrorist is someone who acts alone without the help or encouragement of a government or a terrorist organization or the direction of a hierarchy; he or she designs a plan and acts by him or herself (Hamm & Spaaij, 2015). None of recent attacks are thought to be directly to al-Qaeda or Islamic State (ISIS) operatives; rather, they were domestic lone wolf terrorist attacks perpetrated by individuals who acted on their own, rather than as part of a larger, formal terrorist group (Lee, 2015). Lone wolves are often homegrown terrorist where there is a connection between pathology and some form of mental illness (Ashlie & Mintech, 2015).

Despite the increase in domestic lone wolf terrorism, research on the topic remains extremely scarce (Eby, 2012; Pantucci, 2011; Spaaij, 2014). The gap between the perceived threat of lone wolf terrorism and the scholarly focus on group-based terrorism indicates the need for more conceptual and empirical examinations of the lone wolf terrorist (Weimann, 2017). Policies created without a full understanding of the problem are less likely to be effective in preventing lone wolf terrorism. But it is necessary to have methods to prevent attacks by lone wolf terrorists, which can do a lot of damage and be harder to trace (Worth, 2016). Working and planning alone allows lone wolves to accomplish acts that would likely be anticipated by law enforcement if attempted by organized groups.

This study will build on recent academic literature on lone wolf terrorism, focusing on lone wolf terrorism and mental illness in addition to other predictors of lone wolf terrorism. An analysis of currently existing data on domestic lone wolf terrorist may reduce the number of incidents by providing a critique of mental health issues relative to this phenomenon. This study may help reduce the number of lone wolf terrorist acts by advancing the scholarly debate on lone wolf terrorism and psychological/mental health disorders as well as inspiring future collaboration between scholars (see Hamm & Spaaij, 2015). With more research on the topic, new policy and procedure may be developed on how to identify lone wolf before they commit terrorist acts.

### **Background**

Though not a new form of terrorism, the emergence of the lone wolf terrorist has been a growing threat to the United States (Spaaij, 2010; Worth, 2016). Lone wolf terrorists have been regarded as a serious threat to public safety in recent years (Weimann, 2017). Lone wolf attacks have become more prevalent in the United States and now top intelligence departments such as Department of Justice, Homeland Security and local law enforcement officials' list of challenges due to the increased number in the United States (Bhojani, 2016, p. 16). Domestic lone wolves are lone operators, isolated from any organized terrorist networks and pushed to violence without assistance. Thus, lone wolf terrorist attacks are difficult to prevent because assailants operate alone (Bhojani, 2016), as individual terrorists are less likely to be detected by law enforcement than those with ties to known terrorist organizations.

Although there is no agreed upon profile for a lone wolf terrorist due to individuality and rarity of occurrence (McCauley & Moskalenko, 2014), researchers have found some common characteristics. These consist of greater propensity to suffer mentally and socially (Nesser, 2012; Spaaij, 2012), criminal history (Gill, Horgan, & Deckert, 2014), tendency to mix personal frustrations with extremist ideologies and externalizing blame and their own problems on others (Nesser, 2012; Spaaij, 2012), depression, grievance, personal crises (e.g., loss of job, financial problems, stress), weapons experience (Gill et al., 2014; Nesser, 2012), and rarely committing acts out of impulsivity (Gill et al., 2014). There is a direct link between mental health and lone wolf terrorist who commit random acts of violence within the United States (Weimann, 2016), as lone wolves have a tendency to suffer from isolation, which can exacerbate psychosis and lead to acts of violence (Burton, 2014). Additionally, lone wolf terrorists often suffer from some form of family violence, abuse, neglect, bullying, and peer rejection. Therefore, it is important to provide some form of treatment for children and their families that have difficulties with basic life and interpersonal skills (Seifert, 2015). Improving the U.S. behavioral health system and increasing the availability and quality of services for those that require them may reduce lone wolf terrorist attacks (Seifert, 2015).

Lone wolf terrorists also tend to create ideologies that combine personal frustrations and aversion with broader political, social or religious aims (Spaaij, 2012). Lone wolves are often homegrown terrorists where there is a connection with pathology—an enduring pattern of cognition, emotion, and behavior that negatively affects a person's adaptation. In psychiatry and clinical psychology, this behavior is

characterized by adaptive inflexibility, vicious cycles of maladaptive behavior, and emotional instability under stress (“Pathology,” n.d.) and some form of mental illness (Ashlie & Mintech, 2015).

Mental illness refers to a wide range of mental health conditions disorders that affect mood, thinking, and behavior. Examples of mental illness include depression, anxiety disorders, schizophrenia, eating disorders and addictive behaviors (Mayo Clinic, 2015). Literature has supported a variety of views of mental illness and violence. Prior to 1980, the dominant view was that the mentally ill were no more violent than anyone and often less likely to be violent. But research has shown that several lone wolf terrorists suffered from a diagnosable psychological/mental illness (Seifert, 2015). The rates of psychological/mental disturbance and social ineffectiveness have also been found to be relatively high among lone wolf terrorists. Therefore, it is not only ideology that drives them, but it is also a combination of multiple factors like ideology, anger, or depression. However, there is still a debate on whether mentally ill individuals are at a higher-than-average risk of violence (Stuart, 2003).

Lone wolves cannot be stopped completely, but their numbers can be reduced and the resulting threat diminished (Bryan, 2017). For instance, good community relations can minimize motivations for violence and encourage local cooperation with authorities. The less that potential terrorists can interact with potential co-conspirators and dangerous groups that give them direction and training, the less dangerous they will be. Thus, intelligence gathering and arrests of suspected cell leaders and targeting terrorist command and control via drone strikes are important strategies.

Further, understanding why individuals become lone wolves can help agencies facilitate and promote disengagement from terrorism. This understanding may reveal the important cross-cultural reasons why domestic lone wolves are suffering from mental illness such as genetics or other environmental variables. This knowledge could prevent domestic lone wolf terrorism and strengthen global counterterrorism efforts (Worth, 2016). The Department of Justice has already funded researchers to examine the characteristics and profiles of previous lone wolf attacks to understand how to prevent further attacks (Worth, 2016).

The rationale for this study is based on the concern over the rise in the number of lone wolf terrorist incidents which have occurred in recent years. This study will address the gaps in research relative to lone wolf terrorist while analyzing demographic variables as it relates to lone wolf terrorists (Bates, 2012). The results of this study will add to existing data on lone wolf terrorist, demographic data, radical relationships, and psychological/mental illness challenges. Additionally, this analysis was focused on why there is an increase in the number of lone wolf terrorist incidents being committed in the last decade in the United States, which may help create innovative approaches to identifying and providing medical treatment needed. This study may also improve the safety and security of people living in this country by reducing the number of incidents currently being perpetrated by lone wolves.

### **Problem Statement**

There has been an increase of lone wolf terrorism (Weimann, 2012), leading to debates on the connection between demographic and psychological/mental health



disorders and lone wolf terrorist who committed random acts of terror (Corner & Gill, 2017). This problem impacts the safety and security of citizens of the United States and is challenging to address because lone wolf terrorists do not conspire with others (Spaaij, 2012). Thus, Homeland Security and other intelligence communities need a clear understanding of lone wolves and how psychological/mental health issues affect them in order to detect and prevent lone wolf terrorism (Hamm & Spaaij, 2015). This study and its results may improve collaboration in the dissemination of data across agencies in addition to prompt revision to existing policy and procedure.

### **Purpose**

The purpose of this study was to increase the understanding, detection, and prevention of domestic lone wolf terrorist incidents committed by lone wolves suffering from psychological and mental illness. The central focus was to bridge the gap between identification and treatment of lone wolves as well as encourage new policy and procedure to secure the safety and security of the United States and other countries. This can be achieved by creating effective lines of communication between agencies and physicians reporting the identity and treatment of those who may present a danger to society. In this quantitative, *expo facto* correlation design, historic and current data were analyzed relative to lone wolf terrorists to help bridge the gap in literature and policy. Much like social factors, the demographic and cultural environment that the potential lone wolf is exposed to will have both positive and negative effects such as feeling isolated, which can lead to acts of violence to no longer feel disconnected. Lone wolves also tend to harbor both personal and political grievances and display signs of mental

instability, which may help explain their attraction to extreme causes and their inability to function within larger groups in society (Strohm, 2017). Based on the results of this study, Homeland Security and other organizations may become proactive rather than reactive in their search, response, and treatment of lone wolves.

### **Research Questions**

The following research questions were used to guide this study:

RQ1: Is there a significant relationship between ethnicity and radical family of a lone wolf terrorist?

$H_01$ : There is not a significant relationship between ethnicity and having family members affiliated with radical activities of a lone wolf extremist?

$H_a1$ : There is a significant relationship between ethnicity and having family members affiliated with radical activities of a lone wolf extremist.

RQ2: Is there a significant relationship between residency status and previous criminal activity of a lone wolf terrorist?

$H_02$ : There is not a significant relationship between residency status and previous criminal activity of a lone wolf terrorist?

$H_a2$ : There is a significant relationship between residency status and previous criminal activity of a lone wolf terrorist

RQ3: Is there a significant relationship between age and previous criminal activity of a lone wolf terrorist?

$H_03$ : There is not a significant relationship between age and previous criminal activity of a lone wolf terrorist?

$H_{a3}$ : There is a significant relationship between age and previous criminal activity of a lone wolf terrorist?

### **Theoretical Framework**

The theoretical base for this study is secondary sources; the best fit to analyze lone wolf terrorists and the mental health status involved cognitive dissonance, literature reviews, and narrative analysis. For instance, this study was also guided by McCauley and Moskalenko's work (2014), which involved creating profiles of lone wolf terrorists and identifying what moves them from radical opinion to radical action, as most radicalization models and frameworks have not focused on lone wolf terrorists. After reviewing a list of literature regarding lone wolf terrorism, McCauley and Moskalenko's framework offered the most recent and relevant framework for this study. McCauley and Moskalenko developed two pyramids: radicalization of opinion and radicalization of action. They concluded that the best indicator of a lone wolf is the combination of radical opinion with means and opportunity for radical action. They also provided criteria for each level to simplify the understanding of how an individual can be placed on a particular level (Dickson, 2015).

Due to the phenomena under investigation, this study also included a cognitive dissonance approach. Cognitive dissonance is a psychological perspective that focuses on everything about the person instead of just behaviors (Poulin, 2014). This would indicate that there are changes in behavior that are linked to changes in personality and mental health issues. These changes may be based on some important fundamental event such as a behavior, environment, or personal factors (Steiner & Mahn, 2014).

Finally, narrative, quantitative analysis contains elements of the empirical analytical scientific approach. The analysis depends on the phenomena under study, which in this case is domestic lone wolf terrorism. The approach guided the research questions and type of quantitative sources of evidence that were used. This analysis helped garner data on how lone wolf terrorist function and examine literature collected on previous lone wolf incidents which reveals the belief, their attitudes, values and ideas that shape of self, identity of lone wolf terrorist (Bakker & De Graaf, 2011).

### **Nature of Study**

This quantitative study was focused on analyzing the socioeconomic factors, demographic factors, violent criminal activity, emotional ties, traumatic experiences, and radical relationships of lone wolf terrorists. A systematic subjective approach was used to describe life experiences and give meaning and examine the complexity inherent in this phenomenon. This methodology is based on the circumstances surrounding my research questions. Most lone wolves are either incarcerated in maximum security prisons and not available for interview or deceased. Therefore, it would be difficult to conduct live interviews or do an observational study. The research design also aligns with the research question, which can be answered using quantitative chi square test and nonexperimental comparison study.

I analyzed data using IBM Statistical Package for the Social Science (SPSS). The dependent variables included psychological/mental illness, violent criminal activity, traumatic experience, emotionally close to family, and previous criminal activity. The independent variables included ethnicity, age, marital status, gender, and citizenship.

This approach helped address the gap in literature regarding why lone wolves slip through the system even after being identified as suffering from mental illness. This study also addressed the need for mental health providers, law enforcement, and other governmental agencies to communicate effectively when information is brought to their attention that these lone wolves exist. This will allow agencies to become more proactive than reactive in their pursuit of lone wolf domestic terrorists.

### **Population and Scope of Study**

A population is a set, group, or collection that is being generalized by the researcher in order to draw a conclusion (Babbie, 2014; Frankfort-Nachmias & Leon-Guerrero, 2015; Frankfort-Nachmias, Nachmias, & DeWard, 2015). A population was employed for this study rather than the use of participants due the nature of using secondary data. The population came from information gathered from Profiles of Individual Radicalization in the United States (PIRUS) Codebook. The population values were based on the data collected from the sample garnered from literature reviews and other scholarly information. Numeric estimations allow for testing of hypotheses that use statistical procedures and draw inference from the population in the sample. The characteristics of interest for this study were environmental factors, demographic variables, psychological/mental illness, and behavioral variables.

### **Data Collection and Instrumentation**

All information obtained and analyzed in this study came from reliable secondary data, as lone wolves are either in maximum security prisons or deceased and not accessible for interview. Because the archival information came from reliable secondary

sources, the results of this study will be able to be replicated. The study included data listed in PIRUS on demographic and behavioral information on lone wolf terrorist and the National Consortium for the Study of Terrorism and Responses to Terrorism (START), which is a department Homeland Security Science and Technology Center of Excellence. Most data were collected from Global Terrorism Database, PIRUS, and START databases. The study included all lone wolf terrorist who have perpetrated terrorist act within the last 5 years. I looked for commonalities among lone wolves. After data were collected, I conducted an analysis using SPSS software.

### **Definitions of Terms**

The following definitions will be used in this study:

*Cognitive dissonance:* Refers to a situation involving conflicting attitudes, beliefs or behaviors. This produces a feeling of discomfort leading to an alteration in one of the attitudes, beliefs, or behaviors to reduce the discomfort and restore balance (McLeod, 2018).

*Domestic lone wolf terrorist:* Lone wolf terrorism is political violence perpetrated by individuals who act alone, who do not belong to an organized terrorist group or network, who act without the direct influence of a leader or hierarchy, and whose tactics and methods are conceived and directed by the individual without any direct outside command or direction (Hamm & Spaaij, 2015).

*Mental illness:* A mental illness is a disease of the brain that causes mild to severe disturbances in thought and/or behavior. The definitions of mental illnesses have changed over the last half-century. *Mental illness* generally refers to conditions that

affect cognition, emotion, and behavior like schizophrenia, depression, autism (Manderscheid, 2015).

*Terrorism:* The U.S. Department of Defense (2014) defined terrorism as the calculated use of unlawful violence or threat of unlawful violence to inculcate fear intended to coerce or to intimidate governments or societies in the pursuit of goals that are generally political, religious, or ideological.

### **Assumptions**

The basic assumption for this study is that there is no unified definition of what lone wolf terrorism is and how mental health issues attribute to the increase in the number of terrorist incidents being perpetrated in this country. The emphasis of this study is to investigate the causal impact of domestic terrorism phenomenon to improve collaboration, bridge the gap in communication, and encourage new proactive ways to identify lone wolves before they commit terrorist acts (Corner & Gill, 2017).

### **Limitations**

Limitations of this quantitative study include the need to use secondary data. Additionally, selection bias can affect the findings of the research such as excluding data that contradicts favored theory. Another concern is generalizability due to the large amounts of data being analyzed. A final limitation is that quantitative research can be demanding. One reason is the need for in-depth quantitative analysis (Rose, Spinks & Canhoto, 2018). There is also the possibility of collecting quantifiable measures of variables and inferences from samples of a population. Quantitative research adopts structured procedures and formal instruments for data collection. The data are collected

objectively and systematically. Finally, the analysis of numerical data is performed through statistical procedures, using SPSS software to analyze the data (Etikan et al, 2016).

It is also important to emphasize some of the limitations inherent in the sources used in this study. First, the sample only includes information from secondary data on individuals who planned or conducted incidents reported in the media. As of 2014 there have been no interviews with lone wolf terrorists (Gill et al., 2014). Second, the level of detailed reports and research vary when collecting data based on individual studies. It is often difficult to distinguish between missing data and variables that could be significant to this study (Dickson, 2015). Thus, it appears that no conclusive data has been collected to date. Consequently, this study addresses the need to look further into data regarding the increase in the number of incidents being perpetrated by domestic lone wolf terrorists.

Reasonable measures to address the limitations were taken because the research is removed from the subjects (lone wolf terrorist) or the research to remain objective. A potential bias that could influence the outcome of the study is the ability to tragedies that this type of terrorism is presently occurring. However, despite the challenges for collecting data for this study, I was able to maintain objectivity when collecting and analyzing the secondary data.

### **Delimitations**

This study included delimitations like other studies focused on sensitive populations. The fact that most domestic lone wolf attacks end in the death of the perpetrator or their arrest in maximum security prisons made it virtually impossible for



me to interview offenders. Consequently, I used secondary data to answer the question of why there is an increase in lone wolf activity. Because much research has been focused solely on mental illness (Stuart, 2003, 30), this study may shed some additional light on the nature of the social interchange that leads to extreme violence and other variables affect lone wolves and mental illness. The study provides further research on this lone wolf phenomena that may help improve on existing public policy and procedures.

### **Significance of Study**

Lone wolf terrorism is no new phenomena; however, incidents are on the rise (Bates, 2012), creating a need for innovative approaches. The significance of this study involves investigating the gaps in research and bringing positive social change through the creation of new public policy and procedure that addresses lone wolf terrorism. The results of this study may add to existing data on lone wolf terrorists and mental health challenges. Furthermore, the study is designed in a manner to fill in the gaps in existing literature and help facilitate positive social change by reducing the amount of violence perpetrated by lone wolf terrorists in the United States. The main aim was to define and analyze the key features and patterns of lone wolf terrorists suffering from psychological/mental illness (see Spaaij, 2010), which I addressed by examining the demographics and psychological/mental state of lone wolves.

### **Summary**

Chapter 1 consists of an introduction to the study, background of the study problem statement, purpose, and theoretical framework, assumptions, limitations significance, and rationale as well as the potential for social change. The research

questions for this study were designed examine which selected predictors could explain the prevalence of lone wolf terrorism in this country.

Chapter 2 presents a review of the available literature about lone wolf terrorism and the theoretical framework used to support this study. Chapter 3 describes the topic selection, research design and data approach, data collection and analysis procedures, validity threats, and ethical consideration of using secondary data. Chapter 4 will present the results and key findings of the study. Lastly, Chapter 5 will include the interpretation of the empirical data for this study and recommendations for future research.

## Chapter 2: Literature Review

### Introduction

Literature on lone wolf terrorists and mental health issues has revealed much information on the mental stability of lone wolves. There has been speculation on whether they could be suffering from some form of mental illness, but in most instances it has not been established (Seifert, 2015). However, the lone wolf may tend to fall into level two psychological mental disorders: personality disorders and depression (Hamm & Spaaij, 2015).

The literature review in this chapter presents research pertaining to the factors that motivate domestic lone wolves to perpetrate terrorism in the United States. The purpose of this literature review is to offer a relevant discussion on lone wolf terrorists and mental health disorders and to provide a detailed overview of current literature relative to domestic lone wolf terrorists. Key words and phrases used in identifying research included *lone wolf*, *mental health and the lone wolf*, *psychopath*, *lone wolf attacks*, *identifying lone wolf*, *the progression of the lone wolf*, *elimination of lone wolf*, *political or religious affiliation of lone wolf*, *criminal intent*, *causation of lone wolf depression*, *psychosis of lone wolf*, *mass shooters*, *social dissonance*, and *Humanistic theory*. In addition to the literature, this study included data from the START and PIRUS to understand the reasons for the increased number of terrorist incidents being perpetrated by lone wolves. This data allowed for comparative analysis on previous secondary data to information being collected today.

### **Theoretical Concept**

The theoretical base for this study involved secondary research sources, which consisted of cognitive dissonance theory, literature reviews, case studies and narratives, and theoretical research. Secondary research sources related to quantitative analysis and ethnicity, psychological/mental illness, and the citizenship of lone wolves and why they become radicalized. The theoretical methods and research reveal the importance of seeing lone wolf terrorists acting from rhetoric embedded in large social movements (Yang, 2015). The subtle and complex ways in which political narratives reject terrorism and political violence inspire acts that are precipitated by lone wolves suffering from some form of mental disease (Berntzen & Sandberg, 2014). Further, humanist learning theorists emphasize that a person's perceptions that are centered in their own experiences affect what they think they are capable of becoming. In the humanist view, knowledge is gained through experience and is relative to the individual.

#### **Cognitive Dissonance Theory**

Cognitive dissonance theories include social, psychological/cognitive, and group process approaches to explaining terrorism and violent radicalization (Dalgaard-Nielsen, 2014). Central to this research was the psychological/cognitive approach based on Festinger's (1957) cognitive dissonance theory. Although traditionally critical and confined to psychology, the theory has been applied to terrorism studies, as it refers to people's conflicting attitudes or behaviors.

Cognitive dissonance refers to conflicting feelings or beliefs toward an issue that may lead to a specific action (Kegley & Blanton, 2013). Festinger's cognitive dissonance

theory suggests that people have an inner drive to hold all their attitudes and behavior in harmony and avoid disharmony, or dissonance (McLeod, 2018). This is known as the principle of cognitive consistency. When there is an inconsistency between attitudes or behaviors (dissonance), something must change to eliminate the dissonance (McLeod, 2018). Humans are sensitive to inconsistencies between actions and beliefs, which produces a feeling of discomfort and leads to changes in one of the attitudes, beliefs, perceptions, or behaviors to reduce the discomfort and restore balance (McLeod, 2014). For example, when people smoke (behavior) and they know that smoking causes cancer (cognition), they are in a state of cognitive dissonance.

Though the theory of cognitive dissonance has predominantly been studied in the field of psychology, it has been insightful to the understanding of economic and terrorism-related issues (Akerlof & Dickens, 1982; Maikovich, 2005). Cognitive dissonance principles have been important to understanding lone wolf terrorism (Maikovich, 2005). Festinger's principles move beyond traditional explanations of terrorist motivations, indicating that lone wolf terrorist motivations are driven by hate, frustration, and psychopathy. Because violence is acceptable to many lone wolves engaged with terrorism, violence as a "conflict-reducing strategy" may not cause dissonance in individuals. In contrast, individuals become motivated to reduce dissonance through engaging in violence and violent acts (Maikovich, 2005). Lone wolves tend to reject their image of a worldwide view, which allows lone wolves to create a powerful parameter in helping them to establish their negative behavior (Jacobson, 2016). Strategies for reducing cognitive dissonance include changing the

environment in which the lone wolf can remove thoughts that cause dissonance and add new thoughts that lead to consonance (Jacobson, as cited in Maikovich, 2005). The following variables may also have a bearing on lone wolf terrorism: age, gender, psychological/mental illness, depression, emotionally close to family, ethnicity, marital status, citizenship, radical family, previous criminal activity, and violent criminal activity.

### **Literature Review Related to Key Variables**

#### **Lone Wolf Terrorist and Mental Health Issues**

The latest increase in lone wolf attacks in the United States highlights the threat posed by domestic terrorism. The rise of populism in the United States has shown that feelings of disenfranchisement, marginalization, and social impotence are not exclusive to any social or religious group but include lone wolf terrorists as well (Bosch, 2017). Many lone-wolf terrorists can be said to have had difficulties functioning adequately in everyday life and maintaining healthy relationships (Seifert, 2015). Further, lone wolf terrorists may suffer from diagnosable mental illness as well as a combination of multiple factors like ideology, anger, or depression (Seifert, 2015). Therefore, it is important to have a better understanding of how lone wolves function and how they think. A severely mentally ill person who is at risk for violence needs access to high quality mental health services (Seifert, 2015). However, there is still a debate on this approach because mental illness and violence are two different characteristics in people, neither of which is enough to define or predict the other (Gill & Corner, 2014; Spaaij, 2012).

Spaaij (2015), states the psychological illness has been broken down into several various levels. Spaaij (2013), states that lone wolves tend to fall into two levels of psychological mental disorders personality disorders and depression. Seifert (2015) concludes that many lone wolf terrorists have some or all other the following characteristic: mental illness, high stress levels problems with partner relationship social awkwardness violent communication and high intelligence. Different types of mental illness plague lone wolf than one would find in the general population (Gill and Corner, 2013).

Studies have indicated that a larger percentage of some lone wolf terrorists are found to be mentally ill compared to group-oriented terrorists or the general population (Seifert, 2016). Mental illness and violence are two different characteristics neither of which is sufficient to define or predict lone wolf terrorist behavior (Spaaij, 2012; Gill and Corner, 2014). Spaaij, Gill and Corner (2015), determined that there is no single profile of the lone wolf terrorist, whereas, groups have multiple characteristics in common. Additionally, only a minority of people with mental illness are violent whereas this is not the case with lone wolf terrorist.

### **Characteristics of Lone Wolf Violence Studies Analyzed**

McCauley and Moskzienko (2015), states that it is important to recognize that research on terrorism predominantly focuses on group-based terrorists. Most terrorists operate in groups, however lone wolf terrorists work in isolation. Given that most pertinent research focuses on group-based terrorists, it is possible that common characteristics of lone wolf terrorists may be overlooked. Therefore, there is a need to

further analyze mental illness in lone wolf to bridge the gap in knowledge of why they react the way they do. This could conceivably reduce the number of domestic lone wolf terrorist incidents perpetrated by them in the United States.

Gill (2014), found that lone wolf attackers were 13.5 times more likely to have a mental illness than a member of an organization engaged in political violence. Some social psychologist believe that groups screen out people with serious mental disorders because the organizations rely on teamwork and reliability. Solo attacks do not require the cooperation of others; and researchers believe lone wolf attackers are fundamentally different than people who participate in organized political violence. In an effort to understand this phenomenon, the Department of Justice had funded two groups of researchers (Worth, 2016), to compile databases of historic lone wolf attacks, to analyze trends, psychological profiles and to gain more insight into the lone wolf who are solo attackers who do not require the cooperation of others. They were careful not to make broad generalization in regards about lone wolf (Spaaij, 2015).

Mark Hamm (2015), a criminologist concluded that someone knows about the planned violent act of the lone wolf prior to perpetrating the act. Gill (2015), said that trying to draw a single personality profile of a lone wolf attacker is like trying to draw a single personality profile of lone wolf terrorist is like trying to draw a generalized profile. According to Gill (2015), what motivates a lone wolf is quite different from a sex crime offender, lone wolf terrorists are rarely motivated by politics alone, and usually there is some personal grievance that drives them. They are far more likely to have a documented mental health history than their counterpart who engage in political mass



murders than with members of organized terrorist cells. And despite the small numbers overall, there are more, lone wolf attacks than there ever have been.

### **Radicalization of Lone Wolf Terrorist**

Lone wolves typically sympathize with a movement, but they also harbor other underlying motivations that specifically affect their radicalization and their attacks. According to Hansen (2018). The research on radicalization of lone wolves has gained little attention compared to other types of terrorism. The most comprehensive studies that have been carried out have either focused on lone wolf terrorism in general (Spaaij 2012; Gill 2015; Simon 2013), while others have focused on context- (Hamm & Spaaij 2017). While no single factor can be held accountable for a lone wolf's radicalization (Harris-Hogan, & Precht, 2014), radicalization often begins when individuals become frustrated with their lives, society, or government policies both foreign and domestic. According to Dickson, 2015, Precht (2007), states a typical radicalization process is that individuals meet similar people and together, they go through series of events and phases Lone Wolf Terrorism (Dickson, 2015), that ultimately can result in terrorism. Some factors that have been attributed to the radicalization process are; social and religious identification, social interaction and integration, prison, family and friend influences, socio-economic status, government policies, personal experiences, criminal history, globalization, racism, psychological state, the internet and global political, cultural and economic developments (Dickson, 2015, p.9). In order to completely understand the radicalization process, it is essential to individually examine factors and behaviors that lead to radicalization (Dickson, 2015).

New research has also shed light on the particularities of lone-actor attack planning and preparation. According to work by Schuurman, Bakker, Gill, and Bouhana, (2017) lone wolf terrorist attack planning and preparation differ markedly from one another in terms of the professionalism and duration of their pre-attack behaviors. The question that the present article examines, is whether the heterogeneity found within patterns of lone-wolf radicalization can be matched to particular modes of attack planning and preparation (Lindekilde, O'Connor & Schuurman, 2017). Particular radicalization patterns might influence target and weapon choice, observance of operational security measures, likeliness of engaging in leakage behavior, and the overall amount of time devoted to planning and preparatory work (Lindekilde, O'Connor & Schuurman, 2017).

Lone wolf terrorists are typically harder to detect than other forms of terrorism because of the lack of involvement of co-conspirators (Escalon, 2016). Lone wolves, by definition, are terrorists who for the most part, have radicalized, planned, and operated alone. This individual process means it is not possible to extricate the exact psychological factors present in all lone wolves. Christopher Hewitt (2003), notes that most extremists, and the general population do not use violence to alter politics or policy (p. 77). Likar (2015), writes that terrorist acts are committed for selfish reasons to assuage the lone wolf and it is unclear whether the terrorist act is a conscious decision for the lone wolf. However, it is logical to believe lone wolves have personal motivations for their actions due to the intrapersonal nature of their planning efforts and attacks.

### **Conclusion/Summary**

Lone wolf terrorism has become a more significant threat to the United States. The number of small-scale terrorist attacks is increasing, and lone wolves conduct the highest percentage of these attacks. Still, only a few of the analyzed articles subjects were directly related to lone wolf terrorism. The literature lacks cohesive conclusions regarding why some terrorists choose the lone wolf tactic while others join groups. Additionally, it did not identify common steps and processes the lone wolf take prior to conducting an attack. Normally it is not the number of lone-wolf terrorists that determines if a lone wolf attack occurs, but the lack of organizational support for the attack. Peter J. Phillips states, “lone wolf terrorism is terrorism perpetrated by a person operating alone who conceives and directs his own actions outside of any formal structure,” (Lee, 2015, p. 7). Such guidance in the literature would help government policy intended to interfere with these steps. Analysts have conducted quantitative analysis and reports on individual lone wolves; however, a quantitative analysis of characteristics of lone wolf attackers and their attempts at terrorism does not exist. This gap results in an absence of factually based policy and strategy to curtail lone wolf terrorism. A need does exist to synthesize current scholarly literature and develop collective database on the phenomenon of lone wolf terrorist as indicated by the current lone wolf terrorist, Stephen Paddock and the massacre in Las Vegas, Nevada.

While some characteristics of the best-known lone wolves are similar, Special Agent Patrick O’Conner of the FBI’s Joint Terrorism Taskforce has suggested that lone wolves are united largely by their differences (Terrorism Trends Conference, 2013). Put

differently, they are similar because they are so dissimilar. There is no standard profile that fits lone wolves; they are actors connected only in definition. Their backgrounds, ideologies, and styles of attack all vary. This is perhaps the most difficult situation for law enforcement to mitigate: how does one prevent, or even identify, a terrorist who does not fit a predetermined model? Much of the research literature suggests that lone wolves are the greatest cause for concern within the counterterrorism community because they operate alone, do not have a standard profile, and may work on the fringes of society. However, not all scholars agree with this assessment. Stewart (2011), suggests that lone wolves are more likely than group terrorists to be detected by law enforcement, because some acting alone must expose himself during the planning states and implementation of an attack.

Stewart (2011) explains that lone wolf attacks must follow the same planning process as an attack conducted by a small cell or hierarchical group. This means that lone wolf is also vulnerable to detection during their planning and preparation for an attack even more so, since a lone wolf must conduct each step of the process alone and therefore must expose himself to detection on multiple occasions rather than delegate risky tasks such as surveillance to someone else in order to reduce the risk of detection. Stewart (2011), further explains that a lone wolf must conduct all the preoperational surveillance, acquire all the weapons, assemble and test all the components of the improvised explosive device (if one is to be used) and then deploy everything required for the attack before launching it, (p. 4).

Chapter 3 describes the topic selection, research design and data approach, data collection and analysis procedures, validity threats, and ethical consideration of using secondary data.

## Chapter 3: Research Method

### **Introduction**

The purpose of this quantitative, ex post facto study was to examine the statistical associations demographic variables related to a population of lone wolf extremists and violent and/or radical extremist behavior. Knowledge of why lone wolves commit terrorist acts may help fill a gap between policy and causal factors relating to lone wolves' behavior. This study will also provide some insight as to why people engage in behaviors associated with terrorism by exploring the association between demographic variables and behavior. This study relied exclusively on archival, deidentified data. Data were analyzed using statistical tests of association. Independent variables included ethnicity, citizenship, exposure to family affiliates who are political extremism, and age. Dependent variables are ethnicity and violent criminal activity.

### **Design**

In this study, I tested for statistical associations between three independent variables (ethnicity, age, and residency status) and the two dependent variables of previous criminal activity and radical family to better understand how and why lone wolves engage in extremist behaviors. Ex post facto (i.e., secondary) data were used; therefore, I was not able to manipulate the characteristics of human participants. This design is used to test relationships between categorical variables. Data were analyzed through a series of three chi square tests of association with the null hypotheses. Chi square was selected because it is nonparametric, size sensitive, and accommodates

categorical variables. Results yielded information relative to how demographic factors may be associated with lone wolf terrorism.

### **Research Questions and Hypotheses**

The guiding research question associated with this study was “Are the demographic variables of ethnicity, age, and residency status exposure to political extremism in the family statistically associated with previous violent criminal activity and/or radical activities of those identified by the federal government as lone wolf extremists?” There were three subquestions to address this overarching research question:

RQ1: Is there a significant relationship between ethnicity and radical family of a lone wolf terrorist?

$H_{01}$ : There is not a significant relationship between ethnicity and having family members affiliated with radical activities of a lone wolf extremist?

$H_{a1}$ : There is a significant relationship between ethnicity and having family members affiliated with radical activities of a lone wolf extremist.

RQ2: Is there a significant relationship between residency status and previous criminal activity of a lone wolf terrorist?

$H_{02}$ : There is not a significant relationship between residency status and previous criminal activity of a lone wolf terrorist?

$H_{a2}$ : There is a significant relationship between residency status and previous criminal activity of a lone wolf terrorist

RQ3: Is there a significant relationship between age and previous criminal activity of a lone wolf terrorist?

$H_{03}$ : There is not a significant relationship between age and previous criminal activity of a lone wolf terrorist?

$H_{a3}$ : There is a significant relationship between age and previous criminal activity of a lone wolf terrorist?

### **Population and Data**

Data for this study consists of population data from the START, more specifically PIRUS. These data are from an empirical and scientifically rigorous perspective. PIRUS contains deidentified, individual level information on backgrounds, attributes, and radicalization process of over 2,100 violent and nonviolent extremists who adhere to far right, far left, or single-issue ideologies in the United States between 1948-2017. These data were acquired and coded using entirely public sources of information and the PIRUS data set is among the first efforts to understand domestic radicalization (START, 2018).

Although data representing approximately over 2,100 cases are available through the PIRUS dataset, inclusion criteria for the study required that each selected case contain data regarding age, ethnicity, citizenship status, exposure of familial political extremism, evidence of radical political extremism, evidence of criminally violent conduct for the years 2012 to 2017 (the 5 most recent years available in the dataset). A power analysis was used to determine sample sizes with the parameters of alpha of .05, power of .8 and 15 degrees of freedom. The estimated sample size is a range between 108 and 238 cases from the sample in order to produce reliable results. Operational definitions of variables are included in the next section with a more detailed explanation of the characteristics of each variable as well as detail regarding measurement.



### **Variables and Operational Definitions**

Social factors like demographics and the cultural environment can affect lone wolves, leading to violent behavior when they feel isolated and disconnected from society. The phenomenon and evaluation of the lone wolf in this study is based on certain characteristics of these individuals. For example, radical behavior may influence family and marital status along with extreme acts of violence and radical behavior. Ethnicity, residency status, marital status, and age were the independent variables with the dependent variables of violent criminal activity and radical activity. For purposes of this study, I will use the same definitions as defined in PIRUS (2018):

- Age is defined as the age when the lone wolf was first involved in nonideologically motivated criminal activities between the ages of 18 and 45.
- Citizenship is the name of the country where the individual had his first date of exposure to a terrorist act.
- Criminal activity is an act committed in violation of law where the consequence of conviction by a court is punishment, especially where the punishment is a serious one such as imprisonment.
- Ethnicity is the state of where a lone wolf terrorist belongs or to what social group they may or may not align themselves to. Race and ethnicity can overlap, but they are distinct.
- Exposure to familial political extremism is defined as what is known as the individual religion and ideology.

- Marital status: what was the individual's marital status at the date of the terrorist incident or exposure.
  - Relationship troubles: Subject have difficulty finding or maintaining romantic relationships:
  - Violent radical activity anyone arrested, indicted and or convicted either engaging or planning to engage in ideologically motivated unlawful behavior.
- Previous violent criminal activity looks at whether or not the lone wolf is involved in non-ideologically motivated criminal activities.

### **Analytic Procedures**

In order to determine whether there is a statistical association between any and/or all of the independent and dependent variables, a series of statistical operations will be undertaken. First, data will be culled and sorted to first separate out the data for the period of time between 2012 and 2017. Then, once those data are identified by date, they will be further evaluated and cleaned for the remaining inclusion criteria. The estimated sample size is a range between 108 and 238 cases from the sample in order to produce reliable results. A minimum of approximately 210 case analysis is required, though all cases meeting inclusion criteria will be used to improve statistical strength.

The next step in the procedure requires the development of frequency distribution tables according to each research question. These tables will be the basis of the chi-square calculations for each of the hypotheses. Chi-square calculations as a test of association will be conducted for each. For purposes of assessing statistical significance,

alpha levels are set at the .05 level. Analysis will be conducted using a statistical application such as SPSS.

### **Assumptions and Limitations**

This study is based on the assumption that there is no unified or centralized data on lone wolf terrorist where data is readily available to the public for review other than that offered by START who published data in PIRUS. The researcher assumed that the secondary archival data collected was done correctly and without bias. Because lone wolf terrorist is considered a dangerous occupation, the accuracy of the reported data may be skewed, and victims may go undetected. Furthermore, the researcher may find that START is reliable form of collecting and analyzing archival secondary data.

**Limitations.** This study has the potential for numerous limitations like any other research on vulnerable populations because of the use of archival data. This primary limitation in this study affects the general validity, which make lone wolves hard to identify. The second limitation is the study will contain only three selected predictors. There are numerous predictors and other dependent variables that are not included and could be considered. Third the lack of lone wolf participants available for interview due to death or incarceration of the lone wolf. Fourth the definition of what a lone wolf is differs depending on who is defining what a lone terrorist is. The disparity in definitions often leads to unreliable and inaccurate data collection.

Reasonable measures to address the limitations in this study will be taken because the researcher is removed from the subject of the research in order to remain objective. A potential bias that could influence the outcome of the study is the ability to quantify the

number of lone wolves used in this study was based on secondary archival data. This bias is addressed by extrapolating the data of the overall number of lone wolves. Despite the challenges that exist for collecting data for this violent population, more empirical research is greatly needed in order for more stringent laws to be developed by lawmakers. Future research should also address any potential limitations as they relate to the important issue of identifying lone wolf terrorist before they commit violent crimes.

Further, this study involved a sensitive population. First, lone terrorist has a tendency to operate in isolation which makes it more difficult to identify perpetrators. Second, the population of lone wolves have a tendency to perpetrate violent criminal activities, third no live subjects were available for interview in this study and fifth, the creation of new instruments nor the ability to find another existing research method was not practicable or suited the needs of this researcher.

### **Issues of Trustworthiness**

In terms of the management of collected data, every effort was made to ensure that validity and trustworthiness of information garnered was maintained. The analysis of the collected data began the moment these data were collected and continue throughout the study. The process as such was iterative and self-reflective, characterized by consistent planning, revision, and inquiry (Higginbottom et al., 2013). This study will analyze the demographic and background characteristics, antecedent events, and behaviors by examining information contained in open-source news reports, when possible, openly available firsthand accounts. The researcher also analyzed relevant documents across online public record depositories such as documentcloud.org,

biographies of ten lone wolves in study (Ted Kaczynski, Timothy McVeigh, David Copeland, Eric Rudolph and Bruce Ivins, Stephen Paddock) and all available scholarly articles.

### **Ethical Considerations/Conflict of Interest**

This proposed study presents no threat to live participants because a population from de-identified are to be used instead of participants. The quantitative approach will be best suited for this study because the population of lone wolf terrorists is adequately represented in the sample. Academic research dictates high standards of accountability and ethics. Given the importance of analyzing data objectively it is imperative that researchers remain objective when analyzing data collected. It is the responsibility of researchers to maintain an open mind, in an effort, to reduce personal biases that could conceivably impact and distort the findings. A number, of ethical issues were considered prior, during, and after the conclusion of the future research. Despite, the fact that it was practically impossible to avoid all ethical dilemmas that emerged during the research, adequate steps to mitigate the potential for ethical dilemmas were taken minimize ethical conflict. Steps were put into place to ensure ethical practices by obtaining feedback provided to this researcher by my chair person and committee member. It was then incorporated into the results of this study in an effort to achieve an increased reliability for the study. My dissertation committee was also used to reduce bias that can occur in any research that is conducted. Monthly contact with the dissertation committee served as a check and balance and source of review in an effort to increase the credibility for this research.

## **Summary**

Lone wolf terrorism remains an ambiguous and enigmatic phenomenon. The boundaries of lone wolf terrorism are fuzzy and arbitrary. This study proposal aims to define and analyze the main features and patterns of lone wolf terrorism, which have to do with isolation, mental illness, and erotetic violent behavior. Lone wolf terrorism is known to be more prevalent in the United States and becoming deadlier with each terrorist event perpetrated by lone wolves. There is evidence that the lethality of lone wolf terrorism is on the increase. The rates of psychological disturbance and social ineptitude are found to be relatively high among lone wolf terrorists. Lone wolf terrorists tend to create their own ideologies that combine personal frustrations and aversion with broader political, social, or religious aims. In this process, many lone wolf terrorists draw on the communities of belief and ideologies of validation generated and transmitted by extremist movements (Spaaij, 2010).

Chapter 4 will briefly review the purpose, research questions, and hypotheses. It will further articulate the finding of my pilot study and the impact the study will have on bridging the gap between events perpetrated by lone wolf who commit violent crimes in the United States.

## Chapter 4: Results

### Introduction

I undertook this study to examine the insights and perspectives of worldwide experts on lone wolf terrorism. This nonexperimental study did not allow for the manipulation of the independent variables, but the purpose of this quantitative study was to examine the relationship between variables of lone wolf terrorism. It is important to understand the probability of predictors and whether lone wolf terrorists are affected by the categorical variables analyzed in this study. These variables may help determine the likelihood of whether someone becomes a lone wolf terrorist. The research questions and hypotheses are within the framework of lone wolf terrorism and are restated as follows:

RQ1: Is there a significant relationship between ethnicity and radical family of a lone wolf terrorist?

$H_01$ : There is not a significant relationship between ethnicity and having family members affiliated with radical activities of a lone wolf extremist?

$H_a1$ : There is a significant relationship between ethnicity and having family members affiliated with radical activities of a lone wolf extremist.

RQ2: Is there a significant relationship between residency status and previous criminal activity of a lone wolf terrorist?

$H_02$ : There is not a significant relationship between residency status and previous criminal activity of a lone wolf terrorist?

$H_a2$ : There is a significant relationship between residency status and previous criminal activity of a lone wolf terrorist

RQ3: Is there a significant relationship between age and previous criminal activity of a lone wolf terrorist?

$H_{03}$ : There is not a significant relationship between age and previous criminal activity of a lone wolf terrorist?

$H_{a3}$ : There is a significant relationship between age and previous criminal activity of a lone wolf terrorist?

### **Methodology**

The methodology used in obtaining the data from each of the indices was reviewed when the initial research of this topic was conducted. However, there was one change in the variables analyzed: the independent variable of citizenship. Though citizenship may be relevant, the analysis concluded that 97.3% of the population analyzed from a random sample were American; therefore, previous criminal activity was analyzed from the population instead. Otherwise, there were no discrepancies in data collection from the plan presented in Chapter 3. Further, the timeframe for data collection was not a consideration in this study due to the fact that it used archival secondary data that was extracted from PIRUS and START codebook, which is a publicly used and approved governmental websites.

### **Baseline Descriptive**

The baseline descriptive and demographic characteristics of the sample was displayed in a Excel spreadsheet that I created and imported into SPSS to analyze results. I had three independent variables—ethnicity, age, and residency status—with two dependent variables of previous criminal activity and radical family. Table 1 shows that



the broad ethnicity variable with the highest frequency was White (67.3%), the middle frequency was Middle Eastern/North American (12.1%), and the lowest frequency percentage among the variables analyzed was Native American (1.3%).

Table 1

*Broad Ethnicity*

	Frequency	Percentage	Valid percent	Cumulative %
Valid				
Hispanic/Latino	11	4.4	4.9	4.9
Black/African American	26	10.4	11.7	16.6
White	150	60.0	67.3	83.9
Middle Eastern/North American	27	10.8	12.1	96.0
Native American	3	1.2	1.3	97.3
Saian	6	2.4	2.7	100.0
Total	223	89.2	100.0	
Missing	0.99	26	10.4	
System	1	0.4		
Total	27	10.8		

Table 2 includes four categories: millennial, Generation X, baby boomers, and Saian. This table indicates that age has a greater frequency of millennials at 66.7%. Saian is the lowest number of individuals affected by age at .8%.

Table 2

<i>Age</i>				
	Frequency	Percentage	Valid percent	Cumulative %
Valid				
Millennial	158	36.2	66.7	66.7
Gen X	51	20.4	21.5	88.2
Baby boomer	26	10.4	11.0	99.2
Saian	2	0.8	0.8	100.0
Total	237	94.8	100	
Missing	0.99	12	4.8	
System	1	0.4		
Total	13	5.2		
Total	250	100.0		

Table 3 shows a break down of five groups: born citizenship, naturalized citizenship, legal permanent citizenship, temporary residents, and undocumented residents. The table indicates that the highest frequency on the residency status variable out of 250 was born citizenship with a frequency of 210. The valid percentage was 89.4%, naturalized citizenship was mid-range at 5.1%, and the lowest percentage was undocumented residents at 0.8%.

Table 3

<i>Residency Status</i>				
	Frequency	Percentage	Valid percent	Cumulative %
Valid				
Born citizenship	210	84.0	89.4	89.4
Naturalized citizenship	12	4.8	5.1	94.5
Legal permanent resident	8	3.2	3.4	97.9
Temporary resident	3	1.2	1.3	0.1
Undocumented resident	2	0.8	0.9	100.0
Total	235	94.0	100.0	
Missing	0.99	14	5.6	
System	1	0.4		
Total	15	6.0		
Total	250	100		

Table 4 includes two categories: no previous criminal activity and yes, there was previous criminal activity. The table shows that the previous criminal activity had the highest frequency at 60.3%. Additionally, 60.3% of lone wolf terrorists were not affected by previous criminal activity, whereas 39.7% of lone wolf terrorists were affected by previous criminal activity.

Table 4

*Previous Criminal Activity*

	Frequency	Percentage	Valid percent	Cumulative %
Valid				
No criminal activity	85	34.0	60.3	60.3
Yes, criminal activity	56	22.4	39.7	100.0
Total	141	56.4	100.0	
Missing	.99	108	43.2	
System	1	0.4		
Total	109	43.6		
Total	250	100.0		

Table 5 shows that radical family with the highest frequency is 52%, the valid percentage was 60.5%, and the least number of frequencies was 2. Fifty-two percent were not affected by radical family, and 2 were affected by radical family. Fourteen percent have engaged in nonviolent illegal activity, and 20.3% of lone wolves are affected by extremist activity from radical family.

Table 5

*Radical Family*

	Frequency	Percentage	Valid percent	Cumulative %
Valid				
No	52	20.8	60.5	60.5
Yes	2	0.8	2.3	62.8
Yes, but only known to have engaged in non-violent illegal activities	12	4.8	14	62.8
Yes, known to engage in extremism	20	8.0	23.3	100.0
Total	86	34.4	100.0	
Missing	.99	163	65.2	
System	1	0.4		
Total	164	65.6		
Total	250	100		

**Results**

I had five variables: three independent variables of ethnicity, age, and residency status and two dependent variables of previous criminal activity and radical family. The sample size involved g power of 3.1.9.2 software, and a goodness fit test was used with a medium effect size of 0.3. A significant level of the alpha was 0.05, my power of the lower limit was 0.8, the degree of freedom was 15, and my lower limit was 210. The minimum effect size of 0.3 was used and the upper limit for the power was 0.99, which gave me the upper limit in cases of 407. Sample size was between the upper limit and the lower limit. The lower limit was 210 and the actual number of cases was 250.

The statistical assumptions are that the level of all measurement variables is nominal or ordinal. All three hypotheses violated the cell assumption and all hypothesis had at least one cell less than 10. Because of this violation I used the likelihood ratio to determine the chi square for  $H_{01}$ : There is not a significant relationship between

ethnicity and having family members affiliated with radical activities of a lone wolf extremist. A chi square test of independence was performed by examining the relationship between ethnicity and radical family. The relationship between the variables was not significant (chi square, 15,  $N = 78$ ) = 21.963,  $P = .109$ .

Table 6

*Case Processing Summary Radical Family and Broad Ethnicity*

	<i>N</i>	Valid percent
Radical family	78	31.2%
Musings	172	68.8
Totals	250	100.0

Table 7

*Radical Family Broad Ethnicity Crosstabulation (a)*

	Hispanic/Latino	Black/African American	White	Middle Eastern/North American
Radical family counts	3	13	18	11
Expected counts	1.8	9.0	21.2	10.8
Percent within radical family	6.4	27.7	38.3	23.4
Percent within broad ethnicity	100	86.7	51.4	61.1
Standardized residual	0.9	1.3	-0.7	0.0
Counts	0.0	0.0	1	0.0
Expected counts	0.1	0.4	0.9	0.5
Percent within radical family	0.0	0.0	50.0	0.0
Percent within broad ethnicity	0.0	0.0	2.9	0.0
Standardized residual	0.3	0.6	0.1	0.7
Count	0	0	6	2
Expected counts	0.3	1.7	4.0	2.1
Percent within radical family	0.0	0.0	66.7	22.2
Percent within broad ethnicity	0.0	0.0	17.1	11.1
Standardized residual	0.06	-1.3	1.0	-1
Counts	0	2	10	5
Expected counts	0.8	3.8	9.0	4.6
Percent within radical family	0.0	10.0	50.0	25.0
Percent within broad ethnicity	0.0	13.3	28.6	27.8
Standardized residual	0.9	-.9	.3	.2
Total count	3	15	35	18
Expected counts	3.0	15.0	35.0	18.0
Percent within radical family	3.8	19.2	44.9	23.1
Percent within broad ethnicity	100.0	100.0	100.0	100.0

Table 8

*Radical Family Broad Ethnicity Crosstabulation (b)*

	Native American	Asian (Including Iran, Afghanistan, Pakistan)	Other
Radical family count	0	2	47.0
Expected count	6	3.6	47.0
Percent within radical family	0.0	4.3	100.0
Percent within broad ethnicity	0.0	33.3	100.0
Standardized residual	.8	-.8	
Yes, but only known to have engaged in legal activities	.0	1	2
Expected count	0	2	2.0
Percent within radical family	0.0	50.0	100
Percent within broad ethnicity	0.0	16.7	2.6
Standardized residual	2	2.2	
Yes, but only known engaged in non-violent illegal activities	1	0	9
Expected count	.1	.7	9.0
Percent within radical family	11.1	0.0	100.0
Percent within broad ethnicity	100.0	0.0	11.5
Standardized residual	2.6	-.8	
Count	0	3	20.0
Expected count	3	1.5	20.0
Percent within radical family	0.0	15.0	100.0
Total	-.5	.2	

Table 9

*Chi Square Test Radical Family Broad Ethnicity*

	Values	df	Asymp significance (2 sided)
Pearson chi square	23.873	15	.067
Likelihood ratio	21.963	15	.109
Linear by linear	4.986		.026
N for valid cases	78		

Table 10

*Symmetric Measures Radical Family*

	Value	Approximate significance
Nominal by nominal Phi	.553	0.67
Radical family Cramer's V	.319	0.67
N of Valid Cases	78	

For null hypothesis 2, There is not a significant relationship between residency status and previous criminal activity of a lone wolf terrorist, the strength of the association between residency status and previous criminal activity was significant (chi square 4,  $N = 135$ ,  $= 10.389$ ;  $P = .034$ ). The effect size of Cramer's V is .237 which is moderate. However, the cells for previous criminal activity and residency status show a strong relationship and has an expected percentage of 10.7.

Table 11

*Case Processing Summary Previous Criminal Activity*

	Cases					
	Valid		Missings		Totals	
	<i>N</i>	Percent	<i>N</i>	Percent	<i>N</i>	Percent
Previous Criminal Activity	135	54.0%	115	46.0%	250	100.0%

Table 12

*Previous Criminal Activity and Residency Status Crosstabulations*

		Citizenship status		
		Born citizen	Naturalized legal	Permanent resident
Previous criminal activity	Count	70	6	3
	Expected Count	72	3.6	2.4
	Percent within Previous Criminal Activity	86.4	7.4	3.7
	Percent within Citizenship Activity	58.3	100.0	75.0
	Standardized Residuals	-0.2	1.3	.04
	Counts	50	0.0	1



Table 13

*Previous Criminal Activity and Residency Status Crosstabulations*

		Residency status		
		Temporary resident	Undocumented resident	Unknown
Previous criminal activity	Counts	2	0.0	81.0
	Expected Counts	1.8	1.2	81.0
	Percent within Previous Criminal Activity	2.5	0.0	100.0
	Percent within Residency Status	66.7	0.0	60.0
	Standardized Residual	0.1	-1.1	
	Count	1.0	2.0	5.0
	Expected Count	1.2	.08	54.0
	Percent Previous	1.9	3.7	100.0
	Criminal Activity percent resident Status	33.3	100.0	40.0
	Standardized Residuals	.02	1.3	
	Count	3.0	2.0	135
Totals	Expected Count	3.0	2.0	135
	Percent within Previous Criminal Activity	2.2	1.5	100.0
	Percent within Residency	100.0	100.0	100.0

Table 14

*Chi Square Test Previous Criminal Activity and Residency Status*

	Values	df	Asymptotic significance (2 sided)
Pearson Chi Square	7.569	4.0	0.109
Likelihood Ratio	10.389	4.0	0.034
Linear by Linear	0.020	1.0	0.887
N of Valid Cases	135		

Table 15

*Symmetric Measure Previous Criminal Activity and Residency Status*

		Values	Approximate Significance
Nominal by Nominal	Phi	0.237	0.109
	Cramer's V	0.237	0.109
N of Valid Cases		135	

For Null Hypothesis 3, There is not a significant relationship between age and previous criminal activity of a lone wolf terrorist, the relationship between age and previous criminal activity was significant (chi square 3,  $N = 139$ ,  $=14.342$ ;  $P = .002$ ). The effect size of the Cramer's  $V = 0.302$  which is moderate. The cells for baby boomers, generation x and violent previous criminal activity shows a strong relationship and has an expected percentage of 10.7.

Table 16

*Case Processing Summary Age and Criminal Activity*

		Cases			
		Valid		Missing	
		Totals			
		<i>N</i>	Percent	<i>N</i>	Percent
Age		139	55.6	111	44.4
		250	100.0		

Table 17

*Age and Previous Criminal Activity Crosstabulation*

		Previous criminal activity		Previous (Non-violent)	Total
Age	Millennial	Count	62	36.0	98.0
		Expected Count	59.2	38.8	98.0
		Percent within Age	63.3	36.7	100.0
		Standardized Residual	4.0	-4.0	
	Generation X	Count	11.0	16.0	27.0
		Expected Count	16.3	10.7	27.0
		Percent within Age	40.7	59.3	100.0
		Standardized Residual	-1.3	1.6	
	Boomer	Count	11.0	1.0	12.0
		Expected Count	7.3	4.7	12.0
		Percent within Age	91.7	8.3	100.0
		Standardized Residual	1.4	-1.7	
	Silent	Count	0.0	2.0	2.0
		Expected Count	1.2	0.8	2.0
		Percent within Age	0.0	100.0	100.0
		Standardized Residual	1.1	1.4	
Total		Count	84.0	55.0	139
		Expected Count	84.0	55.0	139
		Percent within Age	60.4	39.6	100.0

Table 18

*Chi Square Test Previous Criminal Activity and Age*

	Values	df	Asymptotic significance (2 sided)
Pearson Chi Square	12.658	3.0	0.005
Likelihood Ratio	14.342	3.0	0.002
Linear by Linear	125.0	1.0	0.724
N of Valid Cases	139		

Table 19

*Symmetric Measures for Previous Criminal Activity and Age*

		Values	Approximate significance
Nominal by Nominal	Phi	0.302	0.005
Age	Cramer's V	0.302	0.005

**Summary**

In this chapter, I presented the results of the data analysis derived from SPSS, which I used for organizing data. I also addressed the process by which I conducted the data analysis. In the study, I utilized a descriptive quantitative secondary archival data. The data was collected from 2018 website as outlined in this study. The data analysis considered elements of the likelihood and probability of the variables selected for the study. The chi square analysis involved an analytical approach examining indices used in a neutral way of attaining quantitative accounts for defining measurements used as predictors for a specific population, lone wolf terrorist. The final chapter explains the findings, limitations, recommendations, social change implications, and conclusion for the study.

## Chapter 5: Discussion, Conclusions, and Recommendations

### **Introduction**

Lone wolf terrorism remains an ambiguous and enigmatic phenomenon, but this study helps define the main features and patterns of lone wolf terrorism due to demographic variables that affect them. Lone wolf terrorist attacks are difficult to prevent because assailants operate alone (Bhojani, 2016). But this study may advance the scholarly debate on lone wolf terrorism and inspire greater dialogue and collaboration between scholars (Hamm & Spaaij, 2015), which can help encourage approaches to prevent attacks.

In this chapter, I will discuss the findings on lone wolf terrorism and whether demographic variables affect individuals who have the propensity of becoming a lone wolf terrorist. The limitations of the study will also be discussed as well as ideas for future research and social change that emerged from the data analysis on what could be done to mitigate individuals from becoming lone wolf terrorist. The chapter will end with a conclusion of the study.

### **Interpretation of the Findings**

The purpose of this study was to develop a better understanding of lone wolf terrorism while contributing to empirical research based on selected demographic data—the individually selected variables such as age, ethnicity, radical family, previous criminal activity, and residency status. Furthermore, the nature of the study was to research the importance of this phenomenon because of a lack of empirical data being reported on the numbers of lone wolf terrorist in the population of the United States.

I examined several variables of lone wolf terrorist the United States has experienced. The findings extend the knowledge in the discipline by comparing the likelihood of the variables in predicting lone wolf terrorism: ethnicity, radical family, residency status, previous criminal activity, and age. These variables can explain the prevalence of lone wolf terrorism in the United States. The results showed that the demographic variables are significant predictors of lone wolf terrorist, with the exception of ethnicity and radical family.

The analysis and interpretation of the theoretical framework proposed that variables such as age, ethnicity, radical family, previous violent activity, and residency status were significant predictors in analyzing lone wolf terrorists. However, the variables in this study were hard to quantify because there is no standard for data collection of lone wolf terrorist. The data used for this research was taken from PIRUS and the START codebook, which are considered subjective when analyzing lone wolf terrorism because the terms cannot be agreed upon worldwide.

Overall, the study supported research that the hypotheses in this study were accepted. This research was based on evidence that can be verified despite the data being estimations of the lone wolf terrorist. There also remains a wide variation in lone wolf terrorism, and academia continues to highlight the unreliability of these statistics. But this study showed that the data from PIRUS and START regarding ethnicity, radical family, age, previous criminal activity, and residency status were significant in explaining the prevalence of lone wolf terrorists.

### **Limitations of the Study**

The main limitation of this quantitative study was the need to use archival secondary data in analyzing lone wolf terrorist. There have been no interviews with lone wolf terrorists (Gill et al., 2014), as they are either deceased or in maximum security prisons. Consequently, the need to look further into the future relative to the increase in the number of incidents being perpetrated by domestic lone wolf terrorists is imperative.

It is also important to emphasize some of the limitations in the sources used in the study. First, the sample only includes information from secondary archival data on individuals who planned or conducted lone wolf terrorist incidents reported in the media. Second, as the level of detailed reports and research vary when collecting data based on individual studies, it is often difficult to distinguish between missing data and variables that could be significant to this study (Dickson, 2015).

Reasonable measures to address the limitations in the study were taken because the research was removed from the subjects (lone wolf terrorists) or the research remained objective. A potential bias that influenced the outcome of the study was the ability to assess the tragedies that occurred as a result of lone wolf terrorism. Despite the challenges for collecting data, I maintained objectivity while collecting and analyzing secondary archival data.

### **Implication for Social Change**

Regarding positive social change, identifying the way individuals not only become involved in lone wolf terrorism but the ability to disengage from terrorism could provide an opportunity for the safety and security of our country as well as allow for

agencies to be more proactive than reactive. Understanding why individuals become lone wolves will help agencies to facilitate and promote disengagement from terrorism. Such understanding may reveal the important cross-cultural demographic reasons why lone wolf terrorist perpetrate terrorist acts consequently, which can strengthen global counterterrorism efforts as well. This study will increase the awareness of this globally recognized problem that has not only affected the safety and security of the United States but has adverse socioeconomic and legal implications. The results of this study will be published, distributed, and presented at conferences.

### **Methodological and Theoretical Implications**

There are also methodological and theoretical implications for data analysis specifically in the United States as it relates to lone wolf terrorists. First, secondary data offered methodological benefits that contributed to this phenomenon especially in the United States, which generated new knowledge on the selected variables. Second, the goals for this study were the same as that of other researchers to contribute to scientific knowledge by offering an alternative perspective on this global issue. Third, a systematic process was required in this study, which required accepting challenges that occurred with existing and archival data. Fourth, this study provided a framework for decision makers. Lastly, this study set out to measure the association between the variables. This study was designed to examine the probability of the variables associated with the prevalence of lone wolf terrorist in the United States.



## **Recommendations**

There are a number of recommendations that should be considered in order to further research on lone wolf terrorist. First, a time series study is recommended. A time-series chart could be constructed displaying the measurement of change in the variables over time (Babbie, 2015). Second, access to full copies of evaluation reports rather than only those publicly available may further investigations on the topic. Third, incorporating reports available can help obtain better international crime statistics tracked through multi-agencies. Fourth, using social media can be used as a platform for networking and mainstreaming awareness into identifying lone wolf terrorist. Lastly, it is important to include all forms of terrorism perpetrated by lone wolf terrorists and not just highlight demographic variables but psychological wellness variable as well.

## **Conclusion**

A systematic subjective approach was used to examine the depth and complexity inherent in the lone wolf terrorist phenomenon. This methodology was based on the circumstances surrounding the analysis of the research questions. The use of secondary archival data was effectively used in this study. The findings in this study have significant implication for public awareness, policy change, and the need for sociological research to continue on this topic. Specific incidents, laws, penalties, terminology, and definitions differ from country to country. Therefore, the findings of this study will serve as a measurement tool to establish a framework to better recognize and strengthen future identification efforts in an effort for the United States to expand on the limited research on this problem.

## References

- Andres, J., & Pisoiu, D. (2016). *Mental illness and terrorism*. Retrieved from <http://www.start.umd.edu/news/mental-illness-and-terrorism>
- Ashlie, P., & Minteh, B. S. (2015). *Home grown terrorism in the United States (US): Causes, affiliations and policy Implications*. Retrieved from [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2518616](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2518616)
- Bakker, E., & De Graaf, B. (2011). Preventing lone wolf terrorism: Some CT approaches addressed. Retrieved from <http://www.terrorismanalysts.com/pt/index.php/pot/article/view/preventing-lone-wolf/html>
- Barrett, R. (2012). The use of the internet for terrorist purposes. Retrieved from [https://www.unodc.org/documents/frontpage/Use\\_of\\_Internet\\_for\\_Terrorist\\_Purposes.pdf](https://www.unodc.org/documents/frontpage/Use_of_Internet_for_Terrorist_Purposes.pdf)
- Bazeley, P., & Jackson, K. (2013). Quantitative data analysis with NVivo. Retrieved from <https://dl.acm.org/citation.cfm?id=2531382>
- Berntzen, L. E., & Sandberg, S. (2014). The collective nature of lone wolf terrorism. Retrieved from <http://psycnet.apa.org/record/2014-45691-003>
- Byman, D. L. (2017a, February 14). How to hunt a lone wolf: Countering terrorists who act on their own. *Brookings*. Retrieved from <https://www.brookings.edu/opinions/how-to-hunt-a-lone-wolf-countering-terrorists-who-act-on-their-own/>
- Byman, D. L. (2017b, March 15). Can lone wolves be stopped? [Blog post]. Retrieved

from <https://www.brookings.edu/blog/markaz/2017/03/15/can-lone-wolves-be-stopped>

Beyer, A. C. (2015, June 29). Mental illness and terrorism. *International Policy Digest*.

Retrieved from <https://intpolicydigest.org>

Bhojani, F. (2016). America's lone-wolf terrorists are unpredictable in almost every

regard. Retrieved from <https://qz.com/807997/lone-wolf-terrorists-gun-control-us/>

Bockler, N., Hoffmann, J., & Zick, A. (2015). The Frankfurt airport attack: A case study

on the radicalization of a lone-actor terrorist. *Journal of Threat Assessment and*

*Management*, 2(3-4), 153-163. doi.org/10.1037/tam0000045

Bosh, R. (2017). Volatile years: Transnational terrorism in 2027 GGF 2027 transnational

terrorism working group. Retrieved from

<http://www.ggfutures.net/analysis/transnational-terrorism-in-2027>

Clark, S. (2017). 5 research biases: How to identify and avoid them in your research.

Retrieved from <https://www.linkedin.com/pulse/5-research-biases-how-identify-avoid-them-your-scott-clark>

Corner, E., & Gill, P. (2015). A false dichotomy? Mental illness and lone-actor terrorism.

*Law and Human Behavior*, 39(1), 23-34. <http://dx.doi.org/10.1037/lhb0000102>.

Corner, E., & Gill, P. (2017). *Is there a nexus between terrorist involvement and mental*

*health in the age of the Islamic State?* Retrieved from

<https://www.ctc.usma.edu/posts/is-there-a-nexus-between-terrorist->

Corner, E., Gill, P., & Oliver, M. (2009). Mental health disorders and the terrorist: A

research note probing selection effects and disorder prevalence. Retrieved from

<http://www.tandfonline.com/doi/pdf/10.1080/1057610X.2015.1120099>

Del Real, J. A., & Bromwich, J. E. (2017, October 2). Stephen Paddock, Las Vegas Suspect, was a gambler who drew little attention. *New York Times*. Retrieved from <https://www.nytimes.com>

Diamond, S. (2008). Terrorism, resentment and the Unabomber. Retrieved from <https://www.psychologytoday.com/blog/evil-deeds/200804/terrorism-resentment-and-the-Unabomber>

Dickson, L. W. (2015). Lone wolf terrorism a case study: The radicalization process of a continually investigated & Islamic State inspired lone wolf terrorist. Retrieved from <https://dspace.mah.se/bitstream/handle/2043/19258/Lone%20Wolf%20Terrorism%20-%20Masters%20Thesis%20-%20Lewis%20W.Dickson.pdf?sequence=2>

Disley, E. Weed, K., Redding, A., Clutterbuck, L., & Warnes, R. (2012). *Individual disengagement from Al Qaida influenced terrorist groups*. Santa Monica, CA RAND Corporation.

Eby, C. A. (2014). The nation that cried lone wolf: A data-driven analysis of individual terrorists in the United States Since 9/11. Retrieved from [http://calhoun.nps.edu/bitstream/handle/10945/6789/12Mar\\_Eby.pdf?sequence=1](http://calhoun.nps.edu/bitstream/handle/10945/6789/12Mar_Eby.pdf?sequence=1)

Eliot, S. (2011). Using Excel quantitative data analysis coding quantitative data, quantitative data analysis. Retrieved from [www.betterevaluation.org/.../Using%20Excel%20for%20Quantitative%20Data%20Anal](http://www.betterevaluation.org/.../Using%20Excel%20for%20Quantitative%20Data%20Anal).

- Escalon, J. (2016). Lone wolf radicalization in a post ISIL world. Retrieved from [https://www.utep.edu/liberalarts/nssi/\\_Files/docs/Capstone%20projects1/Julio--Capstone.pdf](https://www.utep.edu/liberalarts/nssi/_Files/docs/Capstone%20projects1/Julio--Capstone.pdf)
- Festinger, L., & Carlsmith, J. M. (1959). Cognitive consequences of forced compliance. *Journal of Abnormal and Social Psychology*, 58, 203-210. Retrieved from <https://web.mst.edu/~psyworld/general/dissonance/dissonance.pdf>
- Frankfort-Nachmias, C., & Leon-Guerrero, A. (2015). *Social Statistics for a Diverse Society*. Los Angeles, CA: Sage.
- Frankfort-Nachmias, C., Nachmias, D., & DeWaard, J. (2015). *Research methods in the social sciences* (8th ed.). New York, NY: Worth.
- Gall, J. M. (n.d.). Domestic lone wolf terrorists: An examination of patterns in domestic lone wolf targets, weapons, and ideologies. Retrieved from <https://hdl.handle.net/1920/9164>
- Gill, P., Horgan, J., & Deckert, P. (2015). Bombing alone: Tracing the motivations and antecedent behaviors of lone-actor terrorists. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1111/1556-4029.12312/full>
- Gruenewald, J., Chermak, S., & Freilich, J. D. (2013). Far-right lone wolf homicides in the United States. Retrieved from <https://www.tandfonline.com/doi/full/10.1080/1057610X.2013.842123?scroll=top&needAccess=true>
- Gustafsson, J. (2017). Single case studies vs. multiple case studies: A comparative study. Retrieved from <http://www.diva->

portal.org/smash/get/diva2:1064378/FULLTEXT01.pdf

Hamm, M., & Spaaij, R. (2015). Lone wolf terrorism in America: Using knowledge of radicalization pathways to forge prevention strategies. Retrieved from <https://www.ncjrs.gov/pdffiles1/nij/grants/248691.pdf>

Hansen, S. I. (2018). Radicalization and lone wolf terrorism: A case study of right-wing terrorists. Retrieved from <https://brage.bibsys.no/xmlui/bitstream/handle/11250/2503433/Endal%202018.pdf?sequence=5&isAllowed=y>

Heale, R., & Twycross, A. (2017). What is a case study. <http://dx.doi.org/10.1136/eb-2017-102845>

Higginbottom, M. A. G., Pillay, J. J., & Boadu, Y. N. (2013). Guidance on performing focused ethnographies with an emphasis on healthcare research. *The Quantitative Report*, 18(17), 1-16. Retrieved from <https://nsuworks.nova.edu/tqr/vol18/iss9/1/>

Implementing 911 Commission Recommendation. (2016). *Preventing terrorism and enhancing security (2015)*. Retrieved from <https://www.dhs.gov/implementing-911-commission-I>

Instituut voor Veiligheids-en Crisismanagment. (2018). Retrieved from <http://www.cot.nl/>

Jacobson, M. (2016). Why terrorists quit: Gaining from Al-Qaida's losses. *CTC Sentinel*, 1(8), 1-4. Retrieved from <https://ctc.usma.edu/wp-content/uploads/2010/06/Vol1Iss8-Art1.pdf>

Jessor, R. (1956). Personality theories and the data language of psychology.

- Psychological Review*, 63(3), 173-180. <http://dx.doi.org/10.1037/h0041708>
- Kegley, C. & Blanton, S. (2013-2014). *World Politics: Trend and Transformation*. Retrieved from <http://www.worldcat.org>
- Kohlbacher, F. (2015). *The Use of Quantitative Content Analysis in Case Study Research*. Retrieved from <http://www.quantitative-research.net/index.php/fqs/article/view/75/153>
- Lee, W. A. (2015), Finding the wolves in sheep's clothing: ways to distinguish and deter lone-wolf terrorists. Retrieved from <http://hdl.handle.net/10945/45218>  
[https://calhoun.nps.edu/bitstream/handle/10945/45218/15Mar\\_Lee\\_Walter.pdf?sequence=1&isAllowed=y](https://calhoun.nps.edu/bitstream/handle/10945/45218/15Mar_Lee_Walter.pdf?sequence=1&isAllowed=y)
- Lincoln, Y. S. & Guba (1985). *Naturalistic Inquiry*. Retrieved from Beverly Hills, CA, SAGE Publications.
- Lindekilde, L (2014). *A Typology of Backfire Mechanisms Dynamics of Political Violence* (pp. 51-69). Surrey, UK. Ashgate Publishing Company.
- Lindekilde, L., O'Connor, F. O. & Schuurman, B. (2017). *Radicalization patterns and modes of attack planning and preparation among lone-actor terrorists: an exploratory analysis*. Retrieved from <https://www.tandfonline.com/doi/full/10.1080/19434472.2017.1407814>
- Maikovich, K. A. (2005). *A new Understanding of Terrorism Using Cognitive Dissonance Principles*. Retrieved from *Journal for the Theory of Social Behavior*, 35(4), 373-397. Doi:10.1111/j.1468-5914.2005.00282.
- Manderscheid, R. W., et al, (2015). *Evolving Definitions of Mental Illness and Wellness*.

Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2811514>

McCauley, C. (2013). Toward a Profile of Lone Wolf Terrorists: What Moves an Individual from Radical Opinion to Radical Action. Retrieved from <http://dx.doi.org/10.1080/09546553.2014.849916>

McCauley, C., Moskalenko, S. & Van Son, B. (2013). Characteristics of Lone Wolf Violent Offenders: a Comparison of Assassins and School Attackers. Retrieved from <http://www.terrorismanalysts.com/pt/index.php/pot/article/view/240/html>

McCauley, C. & Moskzienko S. (2011). How Radicalization Happens to Them and Us 1st Edition. Retrieved from <http://www.tandfonline.com/doi/abs/10.1080/09546553.2012.728938>

McLeod, S. (2018). Simply Psychology Cognitive Dissonance. Retrieved from <https://www.simplypsychology.org/cognitive-dissonance.html>

McLeod, S. (2014). Cognitive Dissonance. Retrieved from [www.simplypsychology.org](http://www.simplypsychology.org). <https://www.simplypsychology.org/cognitive-dissonance.html>

Meloy, J. R. & Yakeley, J. (2014) The Violent True Believer as a Lone Wolf Psychoanalytic Perspectives on Terrorism. DOI: 10.1002/bsl.2109. Retrieved from <http://onlinelibrary.wiley.com/enhanced/exportCitation/doi/10.1002/bsl.2109>

Mental Health Association What is Mental Illness. Retrieved from <http://www.triadmentalhealth.org/what-is-mental-illness/n.d.>

Mental illness - Symptoms and causes - Mayo Clinic (2015). Retrieved from <https://www.mayoclinic.org/diseases-conditions/mental-illness/symptoms.../syc->



2037496.

Methods Knowledge Base. (2006). Quantitative Validity. Retrieved from

<http://www.socialresearchmethods.net/kbqualval.php>

Mirchevski, N. (2013). Moderate Balkan Muslims are targeted by Wahhabis and the

Muslim Brotherhood. Retrieved from <http://www.islamicpluralism.org>.

Morag, N. (2012) The National Military Strategic Plan for the War on Terrorism.

Retrieved from <https://www.hsaj.org/articles/170>

Moskalenko, S. (2011). Friction: How Radicalization Happens to Them and Us.

Retrieved from New York, NY Oxford University Press.

National Consortium for the Study of Terrorism and Response to Terrorism. (2018).

Profiles of Individual Radicalization in the United States Codebook. Retrieved from <http://www.start.umd.edu/news/mental-illness-and-terrorism>.

Nijboer, M. (2012). A Review of Lone Wolf Terrorism: The Need for a Different

Approach. *Social Cosmos*, 33-39.

Oleson, C. J. (2003). Criminal Genius: A Portrait of High-IQ Offenders. Retrieved from

<https://books.google.com/books?isbn=0520282426>

Palinkas, L. A., Horwitz, S. M. et al. (2015). Purposeful Sampling for Quantitative Data

Collection and Analysis in mixed Method Implementation Research. Retrieved from

<https://scholar.google.com/scholar?q=Purposeful+sampling+for+quantitative+data+collection>

Pathological. (n.d.). In Collins Dictionary. Retrieved from

<https://www.collinsdictionary.com/us/dictionary/english/pathological>)

Patton, M. Q. (2002). *Quantitative Research and Evaluation Methods* (3<sup>rd</sup> ed.). Thousand Oaks, CA SAGE Publication, Inc. *Research Methods Knowledge Base*, (2006).

Retrieved from <https://www.socialresearchmethods.net/kb/>

psud43. (2012, February 19). Advantages and disadvantages of case studies [Blog post].

Retrieved from <https://psud43.wordpress.com/2012/02/19/advantages-and-disadvantages-of-case-studies/>

Robert Wood Johnson Foundation. (2008a). Semi-structured interviews. Retrieved from <http://www.qualres.org/HomeSemi-3629.html>

Robert Wood Johnson Foundation. (2008b). Lincoln and Guba's evaluation Criteria. Retrieved from <http://www.qualres.org/HomeLinc-3684.html>.

Rose, S., Spinks, N. & Canhoto, I. (2018). *Management Research: Applying the Principles*. Retrieved from [https://www.researchgate.net/publication/305215626\\_Research\\_Methods-Quantitative\\_Qualitative\\_and\\_Mixed\\_methods](https://www.researchgate.net/publication/305215626_Research_Methods-Quantitative_Qualitative_and_Mixed_methods)

Richman, A.& Sharan, Y. (2015). Retrieved from <https://books.google.com/books?hl=en&lr=&id=MQxRCwAAQBAJ&oi=fnd&pg=PA3&dq=how+organized+are+lone+wolf+terrorist&ots=w788snJ3jy&sig=F15NIHnD4FRXDhUzh8wHDtHUow#v=onepage&q=how%20organized%20are%20lone%20wolf%20terrorist&f=false>

Rudestam, K., & Newton, R. (2007). *Surviving your Dissertation: A Comprehensive Guide* 131 to Content Process. Los Angeles, AC. SAGE PublicationsSecBrief.org

- Definition of Terrorism (2014). Retrieved from  
<http://www.secbrief.org/2014/04/definition-of-terrorism/>
- Seifert, K. (2015). Lone-Wolf Terrorists and Mental Illness How Can We Reduce the Risk of Violent Acts Carried Out by Lone Wolf Terrorist. Retrieved from  
<https://www.psychologytoday.com/us/blog/stop-the-cycle/201501/lone-wolf-terrorists-and-mental-illness>
- Shenton, A. K. (2004). Strategies for Ensuring Trustworthiness in Quantitative Research Projects. *Education for Information*, 22(2), 63-75. Retrieved from  
<http://www.ebscohost.com>
- Simon, J. D. (2013). What makes lone-wolf terrorists so dangerous? Retrieved from  
<http://newsroom.ucla.edu/stories/what-makes-lone-wolfe-terrorists-245316/>
- Simon, M, (2016). The Role of the Researcher. Retrieved from  
<http://dissertationrecipes.com/wp-content/uploads/2011/04/Role-of-the-Researcher.pdf>
- Sofaer, S. (2014). Quantitative Methods: What Are They and Why Use Them. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1089055/>
- Spaaij, R. (2010). *The Enigma of Lone Wolf Terrorism: An Assessment*. Retrieved from  
<http://dx.doi.org.10.1080/1057610X2010.501426>
- Stuart, H. (2003). *Journal of World Psychiatry* “Violence and mental illness an overview. Retrieved from  
[https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1525086/#\\_\\_sec2title](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1525086/#__sec2title)
- Stewart, D., al et (1998). Guidelines for Critical Review of Quantitative Studies.

Doi.10.1016/s1051-9815(97)100027-4

Stewart, S. (2011). Cutting Through Lone Wolf Hype Retrieved from

<https://worldview.stratfor.com/article/cutting-through-lone-wolf-hype>

Strohm, C. (2017). Lone Wolf Terrorist. Retrieved from

<https://www.bloomberg.com/quicktake/lone-wolf-terrorism>.

Techo, V. P. (2016). Retrieved from

[https://www.researchgate.net/publication/305215626\\_Research\\_Methods-Quantitative\\_Qualitative\\_and\\_Mixed\\_methods](https://www.researchgate.net/publication/305215626_Research_Methods-Quantitative_Qualitative_and_Mixed_methods)

U. S. Senate: Committee Histories. (n.d.). Retrieved from

<https://www.senate.gov/reference/resources/pdf/committeehistories.pdf>

Wampold, B. E. (2007). Psychotherapy Humanistic and Effective Treatment American

Psychologist, Vol 62(8). Nov 2007, 857-873. Retrieved from

[https://my.apa.org/apa/idm/login.seam?ERIGHTS\\_TARGET=http%3A%2F%2Fpsycnet.apa.org%2F](https://my.apa.org/apa/idm/login.seam?ERIGHTS_TARGET=http%3A%2F%2Fpsycnet.apa.org%2F)

Watson, R. (2014). Quantitative Research. Retrieved from

<https://journals.rcni.com/nursing-standard/quantitative-research-ns.29.31.44.e8681>

Weatherston, D. & Moran, J. (2015). *International Journal of Offender Therapy and*

*Comparative Criminology Terrorism and Mental Illness: Is there a Relationship?*

Retrieved from <http://ijo.sagepub.com/content/47/6/698> The online version of this article can be found at: DOI: 10.1177/0306624X03257244 2003 47: 698

Weimann, G. (2004). Gabriel Weimann [www.terror.net](http://www.terror.net) *How Modern Terrorism Uses*

*the Internet*. Retrieved from <https://www.usip.org/sites/default/files/sr116.pdf>

Weimann, G. (2012). New Terrorist and New Media. Retrieved from

[https://www.wilsoncenter.org/sites/default/files/STIP\\_140501\\_new\\_terrorism\\_F.pdf](https://www.wilsoncenter.org/sites/default/files/STIP_140501_new_terrorism_F.pdf)

Weimann, G. (2015). "Terrorism in cyberspace: The next generation." Retrieved from

<http://www.terrorismanalysts.com/pt/index.php/pot/article/view/429/html>

Whitehead, T. L. (2005). Basic Classical Ethnographic Research Methods Secondary

Data Analysis, Fieldwork, Observation/Participant Observation, and Informal and Semi-structured Interviewing. Retrieved from

<https://static1.squarespace.com/static/542d69f6e4b0a8f6e9b48384/t/573b7ebdc2ea515a3fd6b4c2/1463516862124/Classical-Basic+Ethnographic+Methods.pdf>

Worth, K. (2016). Lone Wolf Attacks Are Becoming More Common and More Deadly.

Retrieved from <https://www.pbs.org/wgbh/frontline/article/lone-wolf-attacks-are-becoming-more-common-and-more-deadly/>

Yin, R. K. (2009). Case Study Research: Design and Methods. Thousand Oaks: SAGE

publications, Inc. Retrieved from

[https://my.apa.org/apa/idm/login.seam?ERIGHTS\\_TARGET=http%3A%2F%2Fpsycnet.apa.org%2](https://my.apa.org/apa/idm/login.seam?ERIGHTS_TARGET=http%3A%2F%2Fpsycnet.apa.org%2)

Zadrzechnia, M. & Philomath, D. (2017). Do you think Theodore Kaczynski aka

"Unabomber", could be diagnosed having a personality disorder? What

personality disorder could it be? Retrieved from [https://www.quora.com/Do-](https://www.quora.com/Do-you-think-Theodore-Kaczynski-aka-\)

[you-think-Theodore-Kaczynski-aka-\"Unabomber\"-could-be-diagnosed-having-a-](https://www.quora.com/Do-you-think-Theodore-Kaczynski-aka-\)

personality-disorder-What-personality-disorder-could-it-be